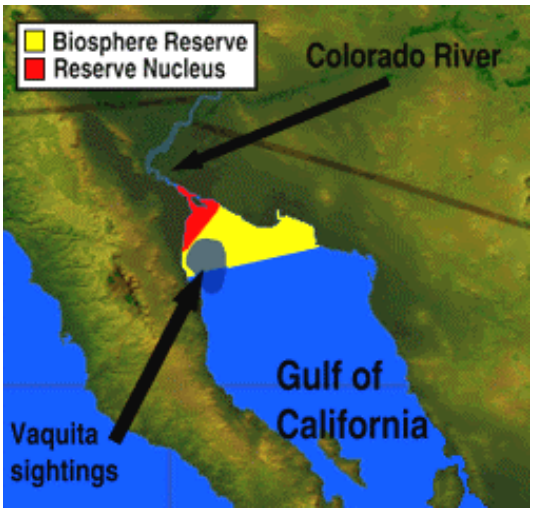
Conveyance Infrastructure

- Over 200 Miles to Gulf intake/outfall each way
- Assume largest practical pipe is 12.5-ft Dia.
- Canals must follow contours each way and require check structures
- Use pump station(s) as necessary for alignment

Fish, Wildlife, and Environmental Issues with Salton Sea Exchange

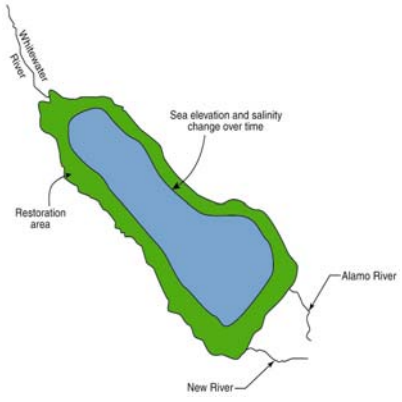


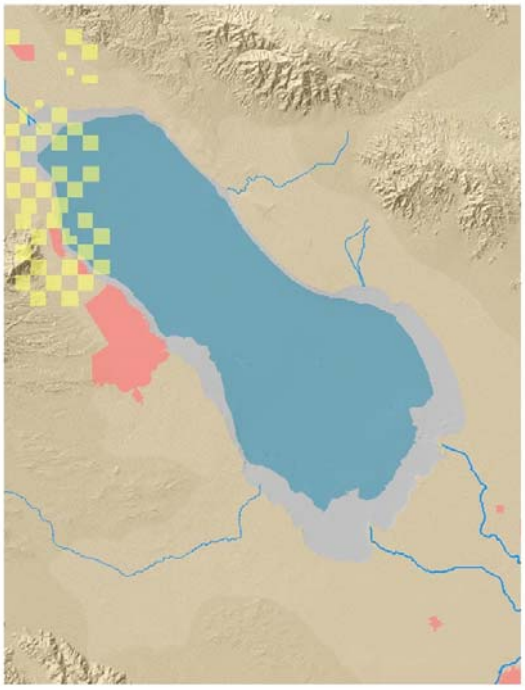
- **Intake considerations**
  - Entrainment protections
  - Habitat changes
  - Salinity needs
  - siting issues
- **Outfall Considerations**
  - water quality changes
  - siting issues
  - Habitat changes

Gulf of California Import/Export Issues

- **Multiple nation project**
  - **Pumping and Conveyance facilities in Mexico – O&M?**
  - **What does Mexico gain?**
- **Species exchange**
- **Water quality exchange**
- **Biosphere**
- **Huge volumes needed to reach salinity and elevation targets**
- **Alignment Impacts**
- **Low Sea elevation if export only**

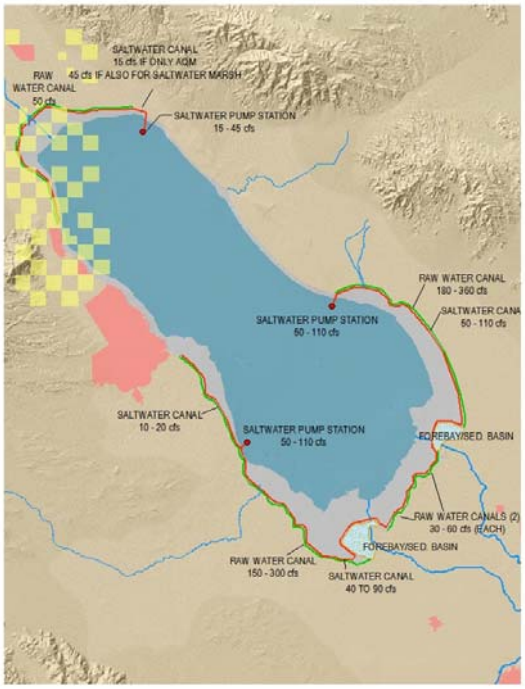
Evolving Sea





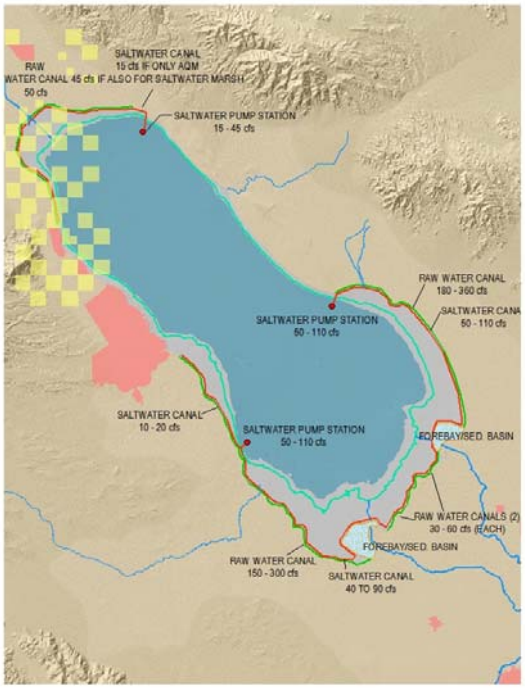
Phase 1

- ***Emphasis*: maintain inflows to the Sea to the extent possible as long has the Sea has habitat value (say, 150,000 ppm)**
- **Move to Phase 2 as soon as science concludes Sea is of marginal habitat value compared to alternative**
- **Planning and monitoring phase**
- **Potentially bypass Phase 1 completely**



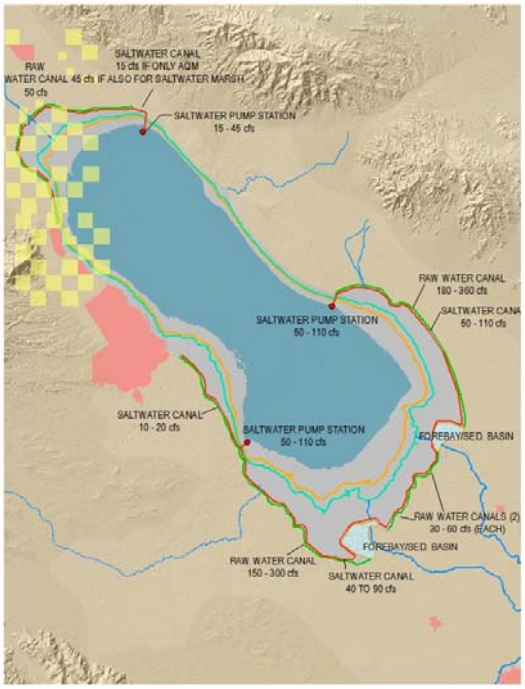
Phase 2

- ***Emphasis*: Construct conveyance facilities for proposed exposed area habitat use, pilot projects, and/or AQM**
- **Sea may still have habitat value – prolong this as desired**
- **Build pilot projects into system**
- **Continue monitoring phase**



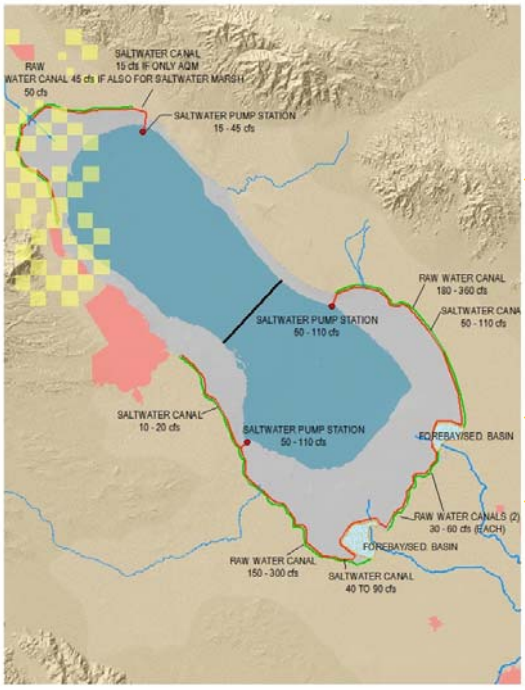
Phase 3

- ***Emphasis*: AQM is the only activity reducing inflow to the Sea – this maximizes the time that Sea remains valuable habitat.**
- **Move to Phase 4 when some inflows can be used for other purposes within the exposed playa**
- **Pilot project and monitoring phase**



Phase 4

- ***Emphasis*: Construct and operate saltwater marsh (and other habitat desirable) and/or agricultural areas in the south & north once Sea becomes too salty to be of habitat value and inflows could then be better used for other purposes.**
- **Could accommodate 55,000 acres saltwater marsh (36,000 acres wet) or up to 36,000 acres farmland plus other habitat features**



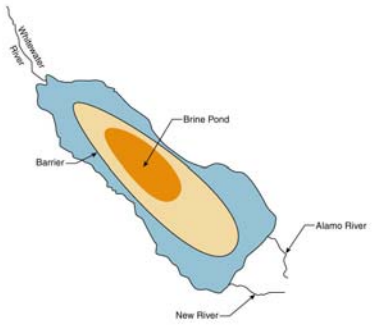
Phase 5

- ***Emphasis*: As sea becomes stable at lower elevation and inflow, reclaim a portion of the sea near marine conditions**
- **Barrier would be much smaller (and porous)**
- **Construct displacement dikes to reclaim land if desired too**

Evolving Sea Issues

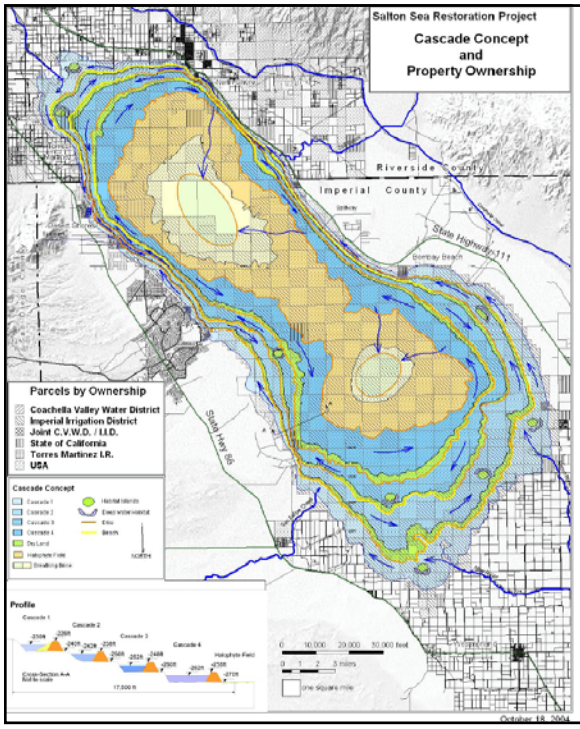
- **Does not support a stable Sea elevation near existing levels anywhere**
- **Continued degradation of all Sea habitat**
  - **similar to brine area in barrier alternatives**
- **Implementation of future phases occurs over many years**
  - **time dependant on inflow changes and water quality degradation**
- **Still requires construction of conveyance systems for habitat and AQM areas**

Multiple Concentric Rings



Multiple Rings vs. Cascade Option

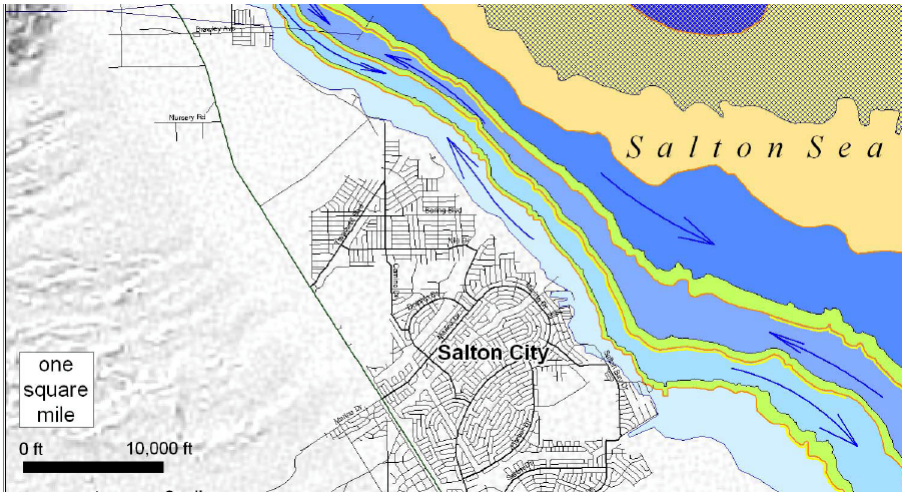
- **DWR working with Imperial Group to understand Cascade concept details and criteria**
- **Multiple ring alternative adopting similar concepts as Cascade**
  - **All get a shoreline**
- **Standardizing features for comparison**
  - **Perimeters earthen/rock dikes vs. Geotubes**
- **Similar water quality and air quality management, as in other alternatives, as needed**
- **Evaluating as "barrier alternative"**
- **May reconfigure flows to avoid large fresh water bodies**



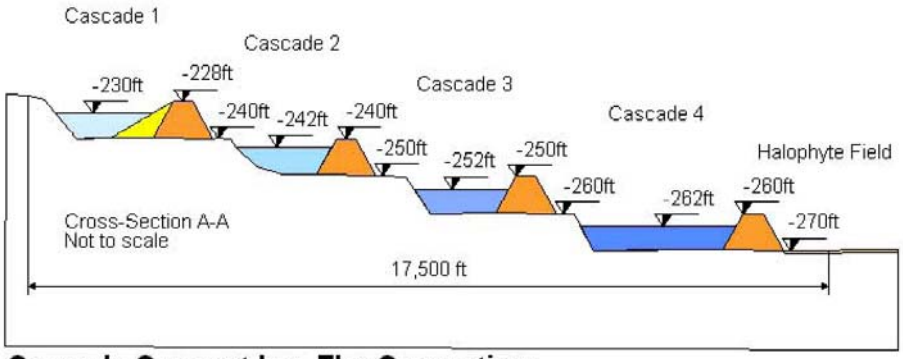
Cascade Concept

- Everyone gets a shoreline
- Freshest water in upper ring, but inflows could be plumbed differently
- Perimeter levees constructed as sea recedes, then water brought back up
- Built over many years
- Can operate on very low inflows (500 TAF)
- Water< 10ft deep, but some deep water habitat created by excavation

Cascade Showing Circulation



Profile



Cascade Concept by: The Consortium

Multiple Concentric Rings Issues

- **Salinity in each ring area is different and should be controlled based on habitat needs**
- **Ring barriers subject to DSOD review (i.e. jurisdictional dam)**
- **AQM conveyance may be more difficult in this alternative**
- **Brine pool fluctuation and lower rings**

Next Steps

- **Work with Habitat Working Group to incorporate specific habitat features in each configuration**
- **Prepare Infrastructure report describing engineering project features**